IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
                             :   Examiner: J. Avellino

DOUGLAS M. DILLON)

                             :   Group Art Unit: 2143

Appln. No.: Unassigned)
          (Divisional of Appln. No. :
          09/596,603 filed)
          June 19, 2000) :

)

Filed: Concurrently herewith :

)

For: NETWORK SYSTEM WITH :
        TCP/IP PROTOCOL)
        SPOOFING (AS AMENDED) :

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

      In compliance with the duty of disclosure under 37 CFR 1.56 and in

accordance with the practice under 37 CFR 1.97 and 1.98, the Examiner's attention

is directed to the documents listed on the enclosed Form PTO-1449. These

documents were cited in Application No. 09/596,603 filed June 19, 2000, the parent

of the above-referenced divisional application. Copies of the documents should be

available in the parent Application under 37 CFR 1.98(d).

REMARKS

U.S. Patent Nos. 5,995,725, 5,995,726, 6,016,388, 6,161,141, 6,338,131, 6,519,651, and 6,571,296 (the "Dillon patents") are in the same family as the subject application. Also in the same family are U.S. Patent Application Nos. 09/559,118 filed April 26, 2000, 09/596,603 filed June 19, 2000, and 09/722,488 filed November 28, 2000, to which the Examiner's attention is respectfully directed. The claims of those applications are set forth on the attached Claim Sheet.

Each of the listed Japanese documents at pp. 4 and 5 of the Form PTO-1449, other than Japanese Laid-Open Patent Application No. 62-221228, was cited in a Japanese Official Action of a counterpart foreign patent application corresponding to the above-referenced application. The Official Action was dated December 8, 1998. A translation of the Official Action was filed with the Second Information Disclosure Statement dated February 15, 2000, in related Application No. 09/204,436 filed December 3, 1998.

Japanese Laid-Open Patent Application Nos. 5-252087, 6-252896, 5-252165, 3-62630, 4-306934, 61-210745, 59-135948, 63-194426, and 63-131731 were cited in a Japanese Official Action of a counterpart foreign patent application corresponding to the above-referenced application. The Official Action was dated December 8, 1998. A translation of the Official Action was filed with the Second Information Disclosure Statement dated February 15, 2000, in related Application No. 09/204,436 filed December 3, 1998.

Japanese Laid-Open Patent Application Nos. 62-189823, 55-120249, 56-2765, 9-506226, 5-167565, 5-252085, 60-167533, 5-252165, 59-

135948, 4-306934, 6-252896, 61-210745, 5-252087, and 63-194426 were cited in a Japanese Official Action of a counterpart foreign patent application corresponding to the above-referenced application. The Official Action was dated November 21, 2000. The Official Action and a translation thereof were filed with the Second Information Disclosure filed April 30, 2001, in the parent Application. According to a commercial database, U.S. Patent No. 5,659,350 (Hendricks, et al.) is in the family of Japanese Laid-Open Patent Application No. 9-506226.

U.S. Patent Nos. 4,775,974, 4,793,813, 5,157,662 and European Patent Document No. 0 483 547 were cited in the European Communication of a counterpart foreign patent application corresponding to the above-referenced application. The European Communication was dated March 14, 2001. A copy of the European Communication was filed with the Third Information Disclosure Statement filed June 7, 2001, in the parent Application.

Japanese Laid-Open Patent Application (JP-A) Nos. 62-189823, 5-252165, and 63-107254, and Japanese Patent Publication (JP-B2) 4-148411 were cited in a Japanese Official Action of a counterpart foreign patent application corresponding to the above-referenced application. The Official Action was dated April 3, 2001. A translation of the Official Action was filed with the Fourth Information Disclosure Statement filed July 9, 2001, in the parent Application. According to a commercial database, Japanese Laid-Open Patent Application (JP-A) No. 61-70823 corresponds to Japanese Patent Publication (JP-B2) No. 4-14811.

The Examiner's attention is also respectfully directed to a Decision of Dismissal of Amendment and a Decision of Rejection, both dated March 12, 2002, which were cited in a counterpart foreign patent application, Japanese Patent Appln. No. 501310/96. Copies of these documents and translations of the same were enclosed with the Sixth Information Disclosure Statement filed May 24, 2002, in the parent Application.

CONCLUSION

It is respectfully requested that the above information be considered by the Examiner and that a copy of the enclosed Form PTO-1449 be returned indicating that such information has been considered.

Applicant's undersigned attorney may be reached at (301) 601-7252.

All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,
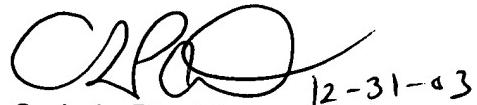
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12-31-03

Attachment: Claim Sheet for Appln. Nos. 09/559,118, 09/596,603, and 09/722,488

HUGHES ELECTRONICS CORPORATION

DSG\llp

CLAIM SHEET

for Appln. Nos. 09/559,118, 09/596,603, and 09/722,488

(1) **Claims of Application No. 09/559,118 filed April 26, 2000**

1-40. (Canceled)

41. (Previously Presented) A driver for use in a computing device having a TCP/IP stack, said driver encapsulating a first IP packet from the TCP/IP stack of the computing device within a second IP packet.

42. (Previously Presented) A driver according to Claim 41, wherein said driver sends the second IP packet onto a network.

43. (Previously Presented) A driver according to Claim 42, wherein the network is the Internet.

44. (Previously Presented) A driver according to Claim 43, wherein an apparatus on the Internet receives the second IP packet and obtains the first IP packet from the second IP packet.

45. (Previously Presented) A driver according to Claim 44, wherein the apparatus on the Internet sends a packet comprising data from the data field of the first IP packet onto an IP network.

46. (Previously Presented) A driver according to Claim 44, wherein the apparatus on the Internet sends the first IP packet onto an IP network.

47. (Previously Presented) A driver according to Claim 46, wherein the first IP packet is addressed such that an IP packet sent by a second apparatus in response to the first IP packet is routed through the apparatus on the Internet.

48. (Previously Presented) A driver according to Claim 42, wherein when the TCP/IP stack generates an ARP request as part of transmitting the first IP packet through said driver, said driver generates an ARP response to the ARP request.

49. (Previously Presented) A driver according to Claim 43, wherein when the second IP packet is fragmented into a plurality of IP packets as a result of its packet size exceeding the MTU of the network, the plurality of IP packets are received by an apparatus on the Internet.

50. (Previously Presented) A driver according to Claim 49, wherein the apparatus on the Internet reassembles the plurality of IP packets into the second IP packet.

51. (Previously Presented) A driver according to Claim 50, wherein the apparatus on the Internet obtains the first IP packet from the second IP packet after reassembling the plurality of IP packets into the second IP packet.

52. (Previously Presented) A driver according to Claim 51, wherein the apparatus on the Internet sends the first IP packet onto a network.

53. (Previously Presented) A driver according to Claim 49, wherein said driver fragments the second IP packet into a plurality of IP packets in response to the packet size of the second IP packet exceeding an MTU.

54. (Previously Presented) A driver according to Claim 49, wherein the Internet is a cause of fragmentation of the second IP packet into a plurality of IP packets.

55. (Previously Presented) A driver according to Claim 41, wherein the computing device is a personal computing device.

56. (Previously Presented) A driver according to Claim 55, wherein the personal computing device is a personal computer.

57. (Previously Presented) A driver according to Claim 41, wherein said driver interfaces to the TCP/IP stack of the computing device using an ethernet device driver interface.

58. (Previously Presented) A driver according to Claim 41, wherein said driver interfaces to the TCP/IP stack of the computing device using a network driver interface specification.

59. (Previously Presented) A driver according to Claim 41, wherein said driver configures the TCP/IP stack of the computing device to have an MTU of 1500 bytes.

60. (Previously Presented) A driver for use in a computing device having a TCP/IP stack, said driver being configured to send an IP packet from the TCP/IP stack through an IP tunnel across a network.

61. (Previously Presented) A driver according to Claim 60, wherein the network is the Internet.

62. (Previously Presented) A driver according to Claim 60, wherein an apparatus on the network receives the IP packet through the IP tunnel.

63. (Previously Presented) A driver according to Claim 62, wherein the apparatus on the network sends the received IP packet towards its destination via a network.

64. (Previously Presented) A driver according to Claim 60, wherein the computing device is a personal computing device.

65. (Previously Presented) A driver according to Claim 64, wherein the personal computing device is a personal computer.

66. (Previously Presented) A driver for use in an apparatus, said driver comprising:

means for receiving from a TCP/IP stack of the apparatus a first IP packet having as its source IP address a first IP address and having as its destination IP address a second IP address;

means for placing the first IP packet within a second IP packet, the second IP packet having as its destination IP address an IP address of a gateway apparatus on the Internet; and

means for sending the second IP packet onto the Internet addressed to the gateway apparatus,

wherein the gateway apparatus obtains the first IP packet from the second IP packet.

67. (Previously Presented) A driver according to Claim 66, wherein the gateway apparatus sends a packet comprising data from the data field of the first IP packet onto a network.

68. (Previously Presented) A driver according to Claim 66, wherein the gateway apparatus sends the first IP packet onto an IP network.

69. (Previously Presented) A driver according to Claim 68, wherein the first IP packet is addressed such that an IP packet sent by a second apparatus in response to the first IP packet is routed through the gateway apparatus.

70. (Previously Presented) A driver according to Claim 68, wherein when the TCP/IP stack generates an ARP request as part of transmitting the first IP packet through said driver, said driver generates an ARP response to the ARP request.

71. (Previously Presented) A driver according to Claim 68, wherein when the second IP packet is fragmented, by one or more of said driver and the Internet, into a plurality of IP packets as a result of its packet size, the plurality of IP packets are received by the gateway apparatus.

72. (Previously Presented) A driver according to Claim 71, wherein said driver fragments the second IP packet into a plurality of IP packets in response to the packet size of the second IP packet exceeding an MTU.

73. (Previously Presented) A driver according to Claim 71, wherein the Internet is a cause of fragmentation of the second IP packet into a plurality of IP packets.

74. (Previously Presented) A driver according to Claim 71, wherein the gateway apparatus reassembles the plurality of IP packets into the second IP packet.

75. (Previously Presented) A driver according to Claim 74, wherein the gateway apparatus obtains the first IP packet from the second IP packet after reassembling the plurality of IP packets into the second IP packet.

76. (Previously Presented) An apparatus comprising:

an internet browser; and

a TCP/IP stack for use with said internet browser,

wherein said internet browser sends a packet across the Internet to a second apparatus through (a) said TCP/IP stack, (b) a tunnel between said apparatus and a gateway apparatus, and (c) means for transmitting packets from the gateway apparatus to the second apparatus.

77. (Previously Presented) An apparatus according to Claim 76, wherein the tunnel comprises an IP tunnel, and wherein the means for transmitting packets from the gateway apparatus to the second apparatus is an IP network.

78. (Previously Presented) A personal computing device comprising:

a TCP/IP stack; and

a driver according to Claim 41.

79. (Previously Presented) A personal computing device comprising:

a TCP/IP stack; and

a driver according to Claim 60.

80. (Previously Presented) A personal computing device comprising:

a TCP/IP stack; and

a driver according to Claim 66.

81. (Previously Presented) A driver according to Claim 46, wherein an internet browser running on the computing device accesses a server through the TCP/IP stack of the computing device which sends a request to the server by way of said driver and the apparatus on the Internet,

wherein the server is on the IP network onto which the apparatus on the Internet sends the first IP packet.

82. (Previously Presented) A driver according to Claim 63, wherein an internet browser running on the computing device accesses a server through the TCP/IP stack of the computing device which sends a request to the server by way of said driver and the apparatus on the network.

83. (Previously Presented) A driver according to Claim 66, wherein an internet browser running on the apparatus accesses a server through the TCP/IP stack of the apparatus which sends a request to the server by way of said driver and the gateway apparatus.

84. (Previously Presented) A driver according to Claim 60, wherein said driver interfaces to the TCP/IP stack of the computing device using an ethernet device driver interface.

85. (Previously Presented) A driver according to Claim 60, wherein said driver interfaces to the TCP/IP stack of the computing device using a network driver interface specification.

86. (Previously Presented) An apparatus according to Claim 76, wherein the connection between the gateway apparatus and the second apparatus is a network connection.

(2) **Claims of Application No. 09/596,603 filed June 19, 2000**

1-8. (Cancelled)

9. (Previously Presented) A gateway for use in a network system, the network system comprising said gateway, a source computer, a destination computer, and a satellite link, said gateway comprising:

a receiver configured to receive a packet sent from the source computer and to send the packet to the destination computer over the satellite link;

an ACK sender configured to send an ACK to the source computer in response to receipt of the packet, wherein the ACK appears to the source computer to have come from the destination computer; and

an ACK discarder configured to receive an ACK from the destination computer indicating receipt of the packet by the destination computer, and to discard the ACK from the destination computer without sending the ACK to the source computer.

10. (Previously Presented) A gateway for use in a network system, the network system comprising said gateway, a source computer, a destination computer, and a satellite link, said gateway comprising:

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a receiver configured to receive a packet sent from the source computer and for sending the packet to the destination computer over the satellite link;

an ACK sender configured to send an ACK to the source computer in response to receipt of the packet, wherein the ACK appears to the source computer to have come from the destination computer; and

an ACK editing unit configured to receive an ACK from the destination computer indicating receipt of the packet by the destination computer, and to edit the ACK and send the edited ACK to the source computer.

11. (Previously Presented) A gateway according to claim 10, wherein said ACK editing unit edits an ACK number.

12. (Previously Presented) A gateway for use in a network system, the network system comprising said gateway, a source computer, a destination computer, and a satellite link, said gateway comprising:

a receiving unit configured to receive a packet sent from the source computer and for sending the packet to the destination computer over the satellite link; and

an ACK sending unit configured to send an ACK to the source computer in response to receipt of the packet, wherein the ACK message appears to the source computer to have come from the destination computer

wherein the packet is formatted in accordance with the TCP

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protocol.

13. (Previously Presented) A gateway for use in a network system, the network system comprising said gateway, a source computer, a destination computer, and a satellite link, said gateway comprising:

a receiving unit configured to receive a packet sent from the source computer and for sending the packet to the destination computer over the satellite link; and

an ACK sending unit configured to send an ACK to the source computer in response to receipt of the packet, wherein the ACK message appears to the source computer to have come from the destination computer

wherein the ACK is formatted in accordance with the TCP protocol.

14-19. (Cancelled)

20. (Previously Presented) An apparatus on the internet, said apparatus comprising:

TCP packet receiving means for receiving a TCP packet sent on the internet from a first apparatus on the internet, the TCP packet having a destination address of a second apparatus on the internet; and

protocol spoofing means for sending a TCP ACK to the first apparatus on the internet in response to said TCP packet receiving means receiving from the internet the TCP packet from the first apparatus on the internet so as to

spoof receipt of the TCP packet by the second apparatus on the internet.

21. (Previously Presented) An apparatus according to claim 20, further comprising TCP packet sending means for sending the TCP packet to the second apparatus on the internet.

22. (Previously Presented) An apparatus according to claim 21, wherein said TCP packet sending means sends the TCP packet to the second apparatus on the internet via a satellite link.

23. (Previously Presented) An apparatus according to claim 22, further comprising TCP ACK receiving means for receiving a reply TCP ACK from the second apparatus in response to receipt by the second apparatus on the internet of the TCP packet sent by said TCP packet sending means.

24. (Previously Presented) An apparatus according to claim 23, further comprising means for discarding the reply TCP ACK without forwarding the reply TCP ACK to the first apparatus on the internet in a case where the reply TCP ACK does not contain data in its data field.

25. (Previously Presented) An apparatus according to claim 23, further comprising modifying means for modifying the reply TCP ACK received from the second apparatus on the internet and for forwarding the modified reply TCP ACK

to the first apparatus on the internet, said modifying means comprising means for

changing the acknowledgement number of the reply TCP ACK received from the

second apparatus on the internet.

26. (Previously Presented) An apparatus according to claim 23,

wherein said TCP packet sending means sends the TCP packet to the second

apparatus on the internet via a satellite link, and

wherein said TCP ACK receiving means receives the reply TCP

ACK from the second apparatus on the internet via a link that has a speed that is

lower than that of the satellite link.

27. (Previously Presented) An apparatus according to claim 23,

wherein said TCP packet sending means sends the TCP packet to the second

apparatus, and said TCP ACK receiving means receives the reply TCP ACK from the

second apparatus on the internet, via different physical links.

28. (Previously Presented) An apparatus according to claim 20,

wherein an acknowledgment for the TCP packet is discarded before reaching the

first apparatus.

29. (Previously Presented) A method comprising:

a TCP packet receiving step of receiving a TCP packet sent on the

internet from a first apparatus on the internet, the TCP packet having a destination

address of a second apparatus on the internet; and

a protocol spoofing step of sending a TCP ACK to the first apparatus on the internet in response to said TCP packet receiving means receiving from the internet the TCP packet from the first apparatus on the internet so as to spoof receipt of the TCP packet by the second apparatus on the internet,

wherein said TCP packet receiving step and said protocol spoofing step are effected by an apparatus on the internet other than the first apparatus and the second apparatus.

30. (Previously Presented) An apparatus on a network, said apparatus comprising:

a TCP packet receiving unit configured to receive a TCP packet sent on the network from a first apparatus on the network, the TCP packet having a destination address of a second apparatus on the network; and

a protocol spoofer configured to send a TCP ACK to the first apparatus on the network in response to said TCP packet receiving unit receiving from the network the TCP packet from the first apparatus on the network so as to spoof receipt of the TCP packet by the second apparatus on the network.

31. (Previously Presented) An apparatus according to claim 30, further comprising a TCP packet sending unit configured to send the TCP packet to the second apparatus on the network.

32. (Previously Presented) An apparatus according to claim 31, wherein said TCP packet sending unit sends the TCP packet to the second apparatus on the network via a satellite link.

33. (Previously Presented) An apparatus according to claim 32, further comprising a TCP ACK receiving unit configured to receive a reply TCP ACK from the second apparatus in response to receipt by the second apparatus on the network of the TCP packet sent by said TCP packet sending unit.

34. (Previously Presented) An apparatus according to claim 33, further comprising a TCP ACK discarding unit configured to discard the reply TCP ACK without forwarding the reply TCP ACK to the first apparatus on the network in a case where the reply TCP ACK does not contain data in its data field.

35. (Previously Presented) An apparatus according to claim 33, further comprising a TCP ACK modifying unit configured to modify the reply TCP ACK received from the second apparatus on the network and for forwarding the modified reply TCP ACK to the first apparatus on the network, said TCP ACK modifying unit comprising an acknowledgement number changing unit configured to change the acknowledgement number of the reply TCP ACK received from the second apparatus on the network.

36. (Previously Presented) An apparatus according to claim 33,

wherein said TCP packet sending unit sends the TCP packet to the second

apparatus on the network via a satellite link, and

wherein said TCP ACK receiving unit receives the reply TCP ACK

from the second apparatus on the network via a link that has a data capacity that is

lower than that of the satellite link.

37. (Previously Presented) An apparatus according to claim 33,

wherein said TCP packet sending unit sends the TCP packet to the second

apparatus, and said TCP ACK receiving unit receives the reply TCP ACK from the

second apparatus on the network, via different physical links.

38. (Previously Presented) An apparatus according to claim 30,

wherein an acknowledgment for the TCP packet is discarded before reaching the

first apparatus.

39. (Previously Presented) A gateway for use in a network system,

the network system comprising said gateway, a source computer, a destination

computer, and a satellite link, said gateway comprising:

means for receiving a data packet for the destination computer sent

from the source computer;

means for sending a transport level ACK to the source computer in

response to receipt of the data packet from the source computer, wherein the

transport level ACK appears to the source computer to have come from the

destination computer;

means for sending the data packet to the destination computer over a satellite link; and

means for repeating sending of the data packet to the destination computer over the satellite link in response to said gateway not receiving from the destination computer a transport level ACK for the data packet within a predetermined amount of time.

40. (Previously Presented) A gateway according to Claim 39, further comprising means for deleting the data packet from a memory in which it is stored in response to receipt by said gateway from the destination computer of a transport level ACK for the data packet.

41. (Previously Presented) A gateway according to Claim 39, wherein when said gateway receives from the destination computer a transport level ACK for the data packet, the transport level ACK containing data, said gateway replaces the ACK number in the transport level ACK with the highest in-sequence sequence number of packets sent by the source computer and sends the transport level ACK to the source computer.

42. (Previously Presented) A gateway according to Claim 39, wherein when said gateway receives from the destination computer a transport level ACK for the data packet, the transport level ACK containing no data, said gateway

discards the transport level ACK without sending the ACK to the source computer.

43. (Previously Presented) An apparatus comprising:

a transport level ACK protocol spoofer that is configured to send to a source computer on a network, in response to receipt of a data packet from the source computer destined for a destination computer on the network, a transport level ACK that appears to the source computer to have been sent by the destination computer;

a packet sender that is configured to send the data packet to the destination computer, to store the data packet in a memory, to resend the data packet from the memory to the destination computer in response to a predetermined amount of time passing without receipt of an ACK from the destination computer, and to delete the data packet from the memory in response to receipt of an ACK from the destination computer.

44. (Previously Presented) An apparatus according to Claim 43, further comprising an ACK editing unit that is configured to receive an ACK from the destination computer, to edit the ACK including replacing the ACK number with the highest in-sequence sequence number of packets received from the source computer, and to send the edited ACK to the source computer.

45. (Previously Presented) A method for use with a first apparatus on a network comprising:

receiving a packet having a source network level address of a second apparatus on a network and a destination network level address of a third apparatus on the network;

sending the packet to the third apparatus;

storing the packet in a queue in a memory;

generating a transport level ACK that appears to have been generated by the third apparatus and sending the transport level ACK to the second apparatus;

receiving a transport level ACK from the third apparatus;

deleting the packet from the queue in the memory in response to receipt of the transport level ACK from the third apparatus;

editing the transport level ACK received from the third apparatus, said editing step comprising setting the sequence number to be the highest in-sequence sequence number of packets sent by the second apparatus; and

sending the edited transport level ACK to the second apparatus.

46. (Previously Presented) A method according to Claim 45, further comprising the step of deleting the packet from the queue in response to loss of connection to the network.

47. (Previously Presented) A method according to Claim 45, further comprising the step of resending the packet to the third apparatus in response to expiration of a predetermined amount of time without receipt of a

transport level ACK from the third apparatus.

48. (Previously Presented) A method according to Claim 45, wherein said sending step comprises use of a satellite link for sending the packet.

49. (Previously Presented) Computer-processable code for effecting the method of Claim 45.

50. (Previously Presented) An apparatus comprising:

a receiving unit that is configured to receive data sent from a source apparatus; and

a TCP ACK sender that is configured to send a TCP ACK to the source apparatus, the TCP ACK being arranged to spoof receipt of the data by a destination apparatus coupled to said apparatus via a satellite link.

51. (Previously Presented) An apparatus according to Claim 50, wherein the destination apparatus is a personal computer,

wherein the source apparatus is an application server, and

wherein said apparatus is a gateway.

52. (Previously Presented) An apparatus according to Claim 50, wherein the destination apparatus is a personal computer.

53. (Previously Presented) An apparatus according to Claim 50, wherein the destination apparatus is a personal computing device.

54. (Previously Presented) An apparatus according to Claim 50, further comprising a data sending unit that is configured to send the data to the destination apparatus via the satellite link.

55. (Previously Presented) An apparatus according to Claim 54, wherein said data sending unit sends the data in a packet.

56. (Previously Presented) An apparatus according to Claim 54, wherein the destination apparatus sends a TCP ACK in response to receipt of the data, which TCP ACK is discarded before reaching the source apparatus.

57. (Previously Presented) An apparatus according to Claim 56, wherein said apparatus discards the TCP ACK sent by the destination apparatus.

58. (Previously Presented) An apparatus according to Claim 54, wherein said data sending unit resends the data in response to non-receipt of a TCP ACK from the destination apparatus within a predetermined amount of time.

59. (Previously Presented) An apparatus according to Claim 54, wherein the data is sent an additional time to the destination apparatus in response

to non-receipt of a TCP ACK from the destination apparatus within a predetermined amount of time.

60. (Previously Presented) An apparatus according to Claim 59, wherein the sending of the data an additional time to the destination apparatus is effected by said apparatus.

61. (Previously Presented) An apparatus according to Claim 54, wherein said apparatus stores the data in a memory and deletes the data from the memory in response to receiving acknowledgment that the destination apparatus has received the data.

62. (Previously Presented) An apparatus according to Claim 61, wherein the acknowledgment is a TCP ACK.

63. (Previously Presented) An apparatus according to Claim 50, further comprising an ACK editing unit that is configured so that upon receipt from the destination apparatus of a TCP ACK for the data, the TCP ACK containing data, said ACK editing unit edits the TCP ACK by replacing the ACK number in the TCP ACK with the highest in-sequence sequence number of packets sent by the source apparatus and sends the edited TCP ACK to the source apparatus.

64. (Previously Presented) An apparatus according to Claim 50,

wherein when the destination apparatus sends a TCP ACK for the data, the TCP

ACK containing data, the ACK number in the TCP ACK is replaced with the highest

in-sequence number of packets sent by the source apparatus and the resulting TCP

ACK is then sent to the source apparatus.

65. (Previously Presented) An apparatus according to Claim 64,

wherein the replacement is effected by said apparatus.

66. (Previously Presented) An apparatus according to Claim 50,

wherein the TCP ACK is sent in an IP packet having a source address corresponding

to the destination apparatus.

67. (Previously Presented) An apparatus according to Claim 66,

wherein the TCP ACK has a source port corresponding to the destination apparatus.

68. (Previously Presented) An apparatus according to Claim 50,

wherein the TCP ACK has a source port corresponding to the destination apparatus.

69. (Previously Presented) A gateway comprising:

a receiving unit that is configured to receive data sent from an

application server via a network connection;

a TCP ACK sending unit that is configured to send a TCP ACK to

the application server via the network connection so as to spoof receipt, by a

personal computer coupled to said gateway via a satellite link, of the data;

a data sending unit that is configured to send the data in a packet to the personal computer via the satellite link,

wherein the personal computer sends a TCP ACK in response to receipt of the data, which TCP ACK is discarded before reaching the application server in the event that the TCP ACK does not contain data,

wherein said data sending unit stores the data in a memory, resends the data in response to non-receipt of an acknowledgment within a predetermined amount of time, and deletes the data from said memory in response to receipt of an acknowledgment.

70. (Previously Presented) A gateway according to Claim 69, wherein the TCP ACK sent by said TCP ACK sending unit has an IP address of the personal computer as a source address and a TCP port of the personal computer as a source TCP port.

71. (Previously Presented) A gateway according to Claim 69, wherein the acknowledgment awaited by said data sending unit is the TCP ACK from the personal computer.

72. (Previously Presented) A gateway according to Claim 71, wherein said gateway effects the discarding of the TCP ACK from the personal computer.

73. (Previously Presented) A gateway according to Claim 69, wherein said gateway effects the discarding of the TCP ACK from the personal computer.

74. (Previously Presented) An apparatus comprising:

receiving means for receiving data sent from a source apparatus; and

TCP ACK sending means for sending a TCP ACK to the source apparatus, the TCP ACK being arranged to spoof receipt of the data by a destination apparatus coupled to said apparatus via a satellite link.

75. (Previously Presented) An apparatus according to Claim 74, wherein the destination apparatus is a personal computer,

wherein the source apparatus is an application server, and

wherein said apparatus is a gateway.

76. (Previously Presented) An apparatus according to Claim 74, wherein the destination apparatus is a personal computer.

77. (Previously Presented) An apparatus according to Claim 74, wherein the destination apparatus is a personal computing device.

78. (Previously Presented) An apparatus according to Claim 74,

further comprising data sending means for sending the data to the destination apparatus via the satellite link.

79. (Previously Presented) An apparatus according to Claim 78, wherein said data sending means sends the data in a packet.

80. (Previously Presented) An apparatus according to Claim 78, wherein the destination apparatus sends a TCP ACK in response to receipt of the data, which TCP ACK is discarded before reaching the source apparatus.

81. (Previously Presented) An apparatus according to Claim 80, wherein said apparatus discards the TCP ACK sent by the destination apparatus.

82. (Previously Presented) An apparatus according to Claim 78, wherein said data sending means resends the data in response to non-receipt of a TCP ACK from the destination apparatus within a predetermined amount of time.

83. (Previously Presented) An apparatus according to Claim 78, wherein the data is sent an additional time to the destination apparatus in response to non-receipt of a TCP ACK from the destination apparatus within a predetermined amount of time.

84. (Previously Presented) An apparatus according to Claim 83,

wherein the sending of the data an additional time to the destination apparatus is effected by said apparatus.

85. (Previously Presented) An apparatus according to Claim 78, wherein said apparatus stores the data in a memory and deletes the data from the memory in response to receiving acknowledgment that the destination apparatus has received the data.

86. (Previously Presented) An apparatus according to Claim 85, wherein the acknowledgment is a TCP ACK.

87. (Previously Presented) An apparatus according to Claim 74, further comprising ACK editing means, wherein upon receipt from the destination apparatus of a TCP ACK for the data, the TCP ACK containing data, said ACK editing means edits the TCP ACK by replacing the ACK number in the TCP ACK with the highest in-sequence sequence number of packets sent by the source apparatus and sends the edited TCP ACK to the source apparatus.

88. (Previously Presented) An apparatus according to Claim 74, wherein when the destination apparatus sends a TCP ACK for the data, the TCP ACK containing data, the ACK number in the TCP ACK is replaced with the highest in-sequence number of packets sent by the source apparatus and the resulting TCP ACK is then sent to the source apparatus.

89. (Previously Presented) An apparatus according to Claim 88, wherein the replacement is effected by said apparatus.

90. (Previously Presented) An apparatus according to Claim 74, wherein the TCP ACK is sent in an IP packet having a source address corresponding to the destination apparatus.

91. (Previously Presented) An apparatus according to Claim 90, wherein the TCP ACK has a source port corresponding to the destination apparatus.

92. (Previously Presented) An apparatus according to Claim 74, wherein the TCP ACK has a source port corresponding to the destination apparatus.

93. (Previously Presented) An apparatus according to Claim 58, wherein the acknowledgment is a TCP ACK.

94. (Previously Presented) A gateway comprising:

receiving means for receiving data sent from an application server via a network connection;

TCP ACK sending means for sending a TCP ACK to the application server via the network connection so as to spoof receipt, by a personal computer coupled to said gateway via a satellite link, of the data;

data sending means for sending the data in a packet to the personal

-34-

computer via the satellite link,

wherein the personal computer sends a TCP ACK in response to receipt of the data, which TCP ACK is discarded before reaching the application server in the event that the TCP ACK does not contain data,

wherein said data sending means stores the data in a memory, resends the data in response to non-receipt of an acknowledgment within a predetermined amount of time, and deletes the data from said memory in response to receipt of an acknowledgment.

95. (Previously Presented) A gateway according to Claim 94, wherein the TCP ACK sent by said TCP ACK sending means has an IP address of the personal computer as a source address and a TCP port of the personal computer as a source port.

96. (Previously Presented) A gateway according to Claim 94, wherein the acknowledgment awaited by said data sending means is the TCP ACK from the personal computer.

97. (Previously Presented) A gateway according to Claim 96, wherein said gateway effects the discarding of the TCP ACK from the personal computer.

98. (Previously Presented) A gateway according to Claim 94,

wherein said gateway effects the discarding of the TCP ACK from the personal computer.

99. (Previously Presented) A method comprising:

a data receiving step of receiving at a first apparatus on a network data sent by a second apparatus on the network;

a TCP ACK sending step of sending by the first apparatus on the network to the second apparatus on the network of a TCP ACK spoofing receipt by a third apparatus on the network of the data, the third apparatus being coupled to the first apparatus via a wireless link of the network.

100. (Previously Presented) A method according to Claim 99, wherein the first apparatus is a gateway, the second apparatus is an application server, the third apparatus is a personal computer, and the wireless link comprises a satellite link.

101. (Previously Presented) A method according to Claim 99, further comprising a step of sending by the first apparatus to the third apparatus of the data via the wireless link.

102. (Previously Presented) A method according to Claim 99, further comprising a step of discarding a TCP ACK, the TCP ACK having been sent by the third apparatus in response to receipt of the data, wherein the TCP ACK is discarded before reaching the second apparatus.

103. (Previously Presented) A method according to Claim 99, further comprising a step of resending by the first apparatus to the third apparatus of the data in response to non-receipt of a TCP ACK from the third apparatus within a predetermined amount of time.

104. (Previously Presented) A method according to Claim 99, further comprising a step of resending to the third apparatus of the data in response to non-receipt of a TCP ACK from the third apparatus within a predetermined amount of time.

105. (Previously Presented) A method according to Claim 99, further comprising a step of editing a TCP ACK sent by the third apparatus to replace the ACK number with the highest in-sequence sequence number of packets sent by the second apparatus.

106. (Previously Presented) A method according to Claim 99, wherein said spoofing is effected by setting the source port of the TCP ACK to correspond to the third apparatus, and sending the TCP ACK in an IP packet having

a source address corresponding to the third apparatus.

107. (Previously Presented) A method according to Claim 99, wherein the first apparatus is a gateway, the second apparatus is an application server, the third apparatus is a personal computer, and the wireless link comprises a satellite link,

wherein said method further comprises a step of sending by the first apparatus to the third apparatus of the data via the wireless link,

wherein said method further comprises a step of resending to the third apparatus of the data in response to non-receipt of a TCP ACK from the third apparatus within a predetermined amount of time,

wherein said spoofing is effected by setting the source port of the TCP ACK sent by the first apparatus to the second apparatus to correspond to the third apparatus, and sending the TCP ACK in an IP packet having a source address corresponding to the third apparatus.

108. (Previously Presented) A personal computer comprising:

means for receiving data sent from a first apparatus on a network via a satellite antenna coupled to said personal computer;

means for sending a TCP ACK directed to the first apparatus on the network to acknowledge receipt of the data,

wherein a second apparatus on the network sends a TCP ACK to the first apparatus on the network so as to spoof acknowledgment of receipt by said

-38-

personal computer of the data.

109. (Previously Presented) A personal computer according to Claim 108, wherein said second apparatus on the network comprises means for discarding the TCP ACK sent by said sending means to prevent the TCP ACK from reaching the first apparatus on the network.

110. (Previously Presented) A personal computer according to Claim 108, wherein the TCP ACK sent by the second apparatus on the network to spoof receipt has a source port corresponding to the personal computer, and is sent in an IP packet addressed to the first apparatus on the network.

111. (Previously Presented) A personal computer according to Claim 110, wherein the first apparatus on the network is an application server, the second apparatus on the network is a gateway, and the network is the internet.

112. (Previously Presented) A personal computer according to Claim 108, wherein the first apparatus on the network is an application server, the second apparatus on the network is a gateway, and the network is the internet.

113. (Previously Presented) An apparatus according to Claim 58, wherein the acknowledgment is a TCP ACK from the destination apparatus.

114. (Previously Presented) An apparatus according to Claim 61, wherein said apparatus deletes the data from the memory in response to receiving the acknowledgment.

115. (Previously Presented) An apparatus according to Claim 62, wherein the acknowledgment is from the destination apparatus.

116. (Previously Presented) An apparatus according to Claim 50, wherein when the destination apparatus sends data addressed to the source apparatus, the ACK number of a TCP packet containing the data and addressed to the source apparatus is set to the highest in-sequence number of packets sent by the source apparatus.

117. (Previously Presented) An apparatus according to Claim 116, wherein said apparatus effects the setting of the ACK number of the TCP packet.

118. (Previously Presented) A gateway according to Claim 69, wherein said data sending unit deletes the data from said memory in response to receipt of the acknowledgment.

119. (Previously Presented) An apparatus according to Claim 82, wherein the acknowledgment is a TCP ACK.

120. (Previously Presented) An apparatus according to Claim 82, wherein the acknowledgment is a TCP ACK from the destination apparatus.

121. (Previously Presented) An apparatus according to Claim 85, wherein said apparatus deletes the data from the memory in response to receiving the acknowledgment.

122. (Previously Presented) An apparatus according to Claim 86, wherein the acknowledgment is from the destination apparatus.

123. (Previously Presented) An apparatus according to Claim 74, wherein when the destination apparatus sends data addressed to the source apparatus, the ACK number of a TCP packet containing the data and addressed to the source apparatus is set to the highest in-sequence number of packets sent by the source apparatus.

124. (Previously Presented) An apparatus according to Claim 123, wherein said apparatus effects the setting of the ACK number of the TCP packet.

125. (Previously Presented) A method according to Claim 107, wherein the acknowledgment is a TCP ACK from the third apparatus.

126. (Previously Presented) An apparatus according to Claim 50,

further comprising a data sending unit that is configured to address the data for transmission to the destination apparatus.

127. (Previously Presented) An apparatus according to Claim 126, wherein said data sending unit sends the data in a packet.

128. (Previously Presented) An apparatus according to Claim 126, wherein the destination apparatus sends a TCP ACK in response to receipt of the data, which TCP ACK is discarded before reaching the source apparatus.

129. (Previously Presented) An apparatus according to Claim 128, wherein said apparatus discards the TCP ACK sent by the destination apparatus.

130. (Previously Presented) An apparatus according to Claim 126, wherein said data sending unit effects retransmission of the data in response to non-receipt of an acknowledgment for the data within an amount of time.

131. (Previously Presented) An apparatus according to Claim 130, wherein the acknowledgment is a TCP ACK.

132. (Previously Presented) An apparatus according to Claim 130, wherein the acknowledgment is a TCP ACK from the destination apparatus.

133. (Previously Presented) An apparatus according to Claim 126, wherein said apparatus stores the data in a memory until receiving an acknowledgment for the data.

134. (Previously Presented) An apparatus according to Claim 133, wherein said apparatus deletes the data from the memory in response to receiving the acknowledgment.

135. (Previously Presented) An apparatus according to Claim 133, wherein the acknowledgment is a TCP ACK.

136. (Previously Presented) An apparatus according to Claim 135, wherein the acknowledgment is from the destination apparatus.

137. (Previously Presented) An apparatus according to Claim 74, further comprising data sending means for addressing the data for transmission to the destination apparatus.

138. (Previously Presented) An apparatus according to Claim 137, wherein said data sending means sends the data in a packet.

139. (Previously Presented) An apparatus according to Claim 137, wherein the destination apparatus sends a TCP ACK in response to receipt of the

data, which TCP ACK is discarded before reaching the source apparatus.

140. (Previously Presented) An apparatus according to Claim 139, wherein said apparatus discards the TCP ACK sent by the destination apparatus.

141. (Previously Presented) An apparatus according to Claim 137, wherein said data sending means effects retransmission of the data in response to non-receipt of an acknowledgment for the data within an amount of time.

142. (Previously Presented) An apparatus according to Claim 141, wherein the acknowledgment is a TCP ACK.

143. (Previously Presented) An apparatus according to Claim 141, wherein the acknowledgment is a TCP ACK from the destination apparatus.

144. (Previously Presented) An apparatus according to Claim 137, wherein said apparatus stores the data in a memory until receiving an acknowledgment for the data.

145. (Previously Presented) An apparatus according to Claim 144, wherein said apparatus deletes the data from the memory in response to receiving the acknowledgment.

146. (Previously Presented) An apparatus according to Claim 144, wherein the acknowledgment is a TCP ACK.

147. (Previously Presented) An apparatus according to Claim 146, wherein the acknowledgment is from the destination apparatus.

(3) **Claims of Application No. 09/722,488 filed November 28, 2000**

20. A peripheral for coupling a satellite antenna device and a computing device, wherein said peripheral is configured to interface to a TCP/IP stack of the computing device using ethernet protocol,

wherein said peripheral generates an ARP response to an ARP request generated by the TCP/IP stack of the computing device.

21. A peripheral according to Claim 20, wherein packets received from the satellite antenna device are scanned so that only packets matching a predetermined IP address are forwarded to the TCP/IP stack of the computing device.

22. A peripheral for connecting a satellite antenna device and a computing device, wherein said peripheral is configured to interface to a TCP/IP stack of the computing device using a network driver interface specification,

wherein said peripheral generates an ARP response to an ARP request generated by the TCP/IP stack of the computing device.

23. A peripheral according to Claim 22, wherein said peripheral is an adapter card.

24. A peripheral according to Claim 22, wherein packets received from the satellite antenna device are scanned so that only packets matching a predetermined IP address are forwarded to the TCP/IP stack of the computing device.

25. An interface between a wireless communication unit and a computing device, wherein the wireless communication unit is presented to a TCP/IP stack of the computing device so as to appear to be a LAN device,

wherein said interface generates an ARP response to an ARP request generated by the TCP/IP stack of the computing device.

26. An interface between a wireless communication unit and a computing device, wherein the wireless communication unit is presented to a TCP/IP stack of the computing device so as to appear to be an ethernet device,

wherein said interface generates an ARP response to an ARP request generated by the TCP/IP stack of the computing device.

27. An interface according to Claim 26, wherein the wireless communication unit is a satellite antenna device.

28. An interface according to Claim 27, wherein packets received from the satellite antenna device are scanned so that only packets matching a predetermined IP address are forwarded to the TCP/IP stack of the computing device.

29. An interface according to Claim 26, wherein the computing device is a personal computer.

30. An interface between a wireless communication unit and a computing device,

wherein the wireless communication unit is presented to a TCP/IP stack of the computing device so as to appear to be any of: (a) a network interface card; (b) a Crynson-Clark Packet Driver Specification device; and (c) a 3Com/Microsoft Network Driver Interface Specification device, and

wherein said interface generates an ARP response to an ARP request generated by the TCP/IP stack of the computing device.

31. An interface according to Claim 30, wherein the wireless communication unit is presented to the TCP/IP stack of the computing device so as to appear to be a network interface card.

32. An interface according to Claim 30, wherein the wireless communication unit is presented to the TCP/IP stack of the computing device so as

to appear to be a Crynson-Clark Packet Driver Specification device.

33. An interface according to Claim 30, wherein the wireless communication unit is presented to the TCP/IP stack of the computing device so as to appear to be a 3Com/Microsoft Network Driver Interface Specification device.

34. A system comprising:

a device configured to interface a satellite antenna unit with a computer; and

computer-processable code for execution on the computer,

wherein said device and said computer-processable code are configured such that said device appears to a TCP/IP stack of the computer to be an ethernet device and such that an ARP response is generated in response to an ARP request generated by the TCP/IP stack of the computer.

35. A system according to Claim 34, wherein said device is an adapter card.

36. A system comprising:

a device configured to interface a satellite antenna unit with a computer; and

computer-processable code for execution on the computer,

wherein said device and said computer-processable code are

configured such that (a) a TCP/IP packet generated by a TCP/IP stack of the computer is encapsulated in an ethernet packet which is stripped off before the packet is sent to the internet, (b) a TCP/IP packet received through the satellite antenna unit from the internet is scanned to determine if the destination IP address matches a predetermined IP address, and if a match is found then the TCP/IP packet is encapsulated in an ethernet packet and passed to the TCP/IP stack of the computer.

37. A system according to Claim 36, wherein said device is an adapter card.

38. A system according to Claim 36, wherein the TCP/IP stack of the computer is configured to set the maximum transmission unit to be as large as possible.

39. A system according to Claim 36, wherein in response to generation of an ARP packet by the TCP/IP stack of the computer, a physical address is generated by said computer-processable code and sent in a reply packet to the TCP/IP stack.

40. A peripheral for coupling a satellite antenna device and a personal computer, wherein said peripheral is configured to interface to a TCP/IP stack of the personal computer using ethernet protocol, and

wherein said peripheral is connected to the satellite antenna device by a coaxial cable.

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	A1	Partial Translation and Abstract of Japanese Laid-Open Patent Application No. 5-252087.
	B1	Partial Translation and Abstract of Japanese Laid-Open Patent Application No. 6-252896.

EXAMINER	DATE CONSIDERED

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FORM PTO 1449 (modified)	ATTY DOCKET NO. PD-N94026L	DIVISIONAL OF APPLICATION NO. 09/596,603
U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: December 31, 2003	APPLICANT DOUGLAS M. DILLON	
	FILING DATE December 19, 2003	GROUP 2143

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		4,841,526	06/20/89	WILSON, ET AL.	371	32	
		4,893,307	01/09/90	McKAY, ET AL.	370	94.1	
		4,924,303	05/08/90	BRANDON, ET AL.	358	86	
		4,942,569	07/17/90	MAENO	370	60	
		5,159,592	10/27/92	PERKINS	370	85.7	
		5,161,194	11/03/92	UJIIE	380	48	
		5,430,709	07/04/95	GALLOWAY	370	13	
		5,586,121	12/17/96	MOURA, ET AL.	370	404	
		5,592,620	01/07/97	CHEN, ET AL.	395	200.01	
		5,594,490	01/14/97	DAWSON, ET AL.	348	6	
		5,608,446	03/04/97	CARR, ET AL.	348	6	
		5,659,350	08/19/97	HENDRICKS, ET AL.	348	6	
		5,764,886	06/09/98	DANIELSON, ET AL.	395	184.01	
		5,995,725	11/30/99	DILLON	395	200.33	
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		6,006,275	12/21/99	PICAZO, JR., ET AL.	709	249	
		6,014,378	01/11/00	CHRISTIE, ET AL.	370	356	
		6,016,388	01/18/00	DILLON	395	200.72	
		6,041,356	03/21/00	MOHAMMED	709	227	
		6,052,718	04/18/00	GIFFORD	709	219	
		6,067,561	05/23/00	DILLON	709	206	
		6,141,682	10/31/00	BARKER	709	217	
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U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

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APPLICANT

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GROUP **2143**

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		P. Komisarczuk, et al., "End-To-End Protocol Performance in ATM/Satellite Interconnected LANs", November 1993, pp. 87-91.
		G. Fairhurst, et al., "An analysis of TCP/IP in the code network", November 1993, pp.16-20
		N. Linge, et al.,"Achieving network interconnection using satellite services", 1993, pp. 165-169
		P. Komisarczuk, et al., "B-ISDN implementation via satellite: the catalyst project", April 1993, pp. 11/1-11/6
		B.R. Badrinath, A. Bakre, T. Imielinski, and R. Marantz, "Handling Mobile Clients: A Cas for Indirect Interaction", Proc. of the 4th Workshop on Workstation Operating Systems (WWOS-IV) (October 1993)
		A. Bakre and B. Badrinath, "I-TCP: Indirect TCP for mobile hosts", Technical Report DCS-TR-314, Rutgers University (October 1994)

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FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary) Date Submitted to PTO: December 31, 2003	ATTY. DOCKET NO. **PD-N94026L**	DIVISIONAL OF APPLICATION NO. **09/596,603**

APPLICANT **DOUGLAS M. DILLON**

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U.S. PATENT DOCUMENTS

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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
		62-189823	08/19/87	JAPAN			Se A B l w
		5-252085	09/28/93	JAPAN			See B B l w
		4-14811	03/16/92	JAPAN			See C B l w
		61-70823	04/11/86	JAPAN			Se D Below
		63-107254	05/12/88	JAPAN			See E Below
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		60-167533	08/30/85	JAPAN			ABSTRACT

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	A	Patent Abstracts of Japan, Abstract for JP 62-189823, August 19, 1987.
	B	Patent Abstracts of Japan, Abstract for JP 5-252165, September 28, 1993.
	C	Partial Translation of JP 4-14811, March 16, 1992.
	D	Patent Abstracts of Japan, Abstract for JP-A-61-70823, April 11, 1986.
	E	Partial Translation and Abstract of JP-A-63-107254.

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